

CANADIAN PETROLEUM
ASSOCIATION

ANNUAL REPORT
1990

Canadian Petroleum Association

The Canadian Petroleum Association is a trade association which represents medium to large oil and gas exploration, production and pipeline companies operating in Canada. The industry's major employers, these companies' combined staff include most of the people who work in upstream oil and gas.

CPA member companies account for more than two-thirds of all upstream petroleum spending in Canada. They produce about 80 per cent of Canada's liquid hydrocarbons and nearly 70 per cent of the nation's natural gas. Virtually all that production goes to market through pipelines belonging to CPA members.

The CPA conducts policy analysis for its members, and helps solve industry problems. The association informs the Canadian public about critical energy issues. On the industry's behalf, it prepares technical and analytical submissions for governments and government agencies. It also gathers and distributes operating, economic and policy information for members. In cooperation with government, regulatory and other agencies and other industry associations, the CPA commissions research and helps set guidelines for the petroleum industry.

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Chairman's Report

By custom, an outgoing CPA chairman reflects on the achievements and challenges of the past year. But our industry's experiences in 1990 lead me to do the opposite – to look ahead.

In my view, 1990 was much more than the beginning of a new decade. It was the harbinger of a new era for our industry, an era of responsible, sensible development. I see this era as having four characteristics, each richly evident in industry activities last year.

The first characteristic is the involvement of numerous stakeholders in development plans. Clear examples of this trend are last year's hearing in the development of the Caroline natural gas discovery and public-involvement efforts by the consortium developing the OSLO oil sands project.

The era before us is also one of conflict resolution on a broader, deeper front than ever before attained. For example, the debate surrounding TransCanada PipeLine's expansion program was complex and acrimonious, but ultimately resolved. I believe the years to come will see challenged again and again our industry's abilities to define and resolve such conflicts in the interests of all stakeholders. We must continually improve our ability to find strategies that enable all players to win.

A third hallmark of this era is the promise of increased productivity through technological breakthroughs. To choose but one example, advances in horizontal drilling techniques – discussed elsewhere in this report – promise urgently-required higher yields from our existing fields and enhanced recovery from our non-conventional energy resources.

The fourth characteristic of the era of responsible development is our response to the environmental challenge. CPA involvement in federal/provincial round tables on energy and the environment, our input into the federal government's Green Plan and a host of other initiatives by both the association and its member companies are evidence of the arrival of this era.

All this poses special challenges for the CPA's future leaders. It will be their responsibility to advance sensible development by building bridges between the industry and its many publics.

Governments, of course, represent a key constituency. We must continually articulate and advance our industry's perspectives on federal, provincial, and territorial policies and fiscal regimes. And to enjoy the benefits of a workable, efficient, fair regulatory framework, we must constantly demonstrate responsible stewardship of Canada's petroleum resources.

Our customers are another key public. Customer relations have always been important to this industry, but never more so than in today's deregulated environment. This association will continue to advocate policies supporting rational, long-term energy security for Canadians and for our export customers. This issue will be fundamental as we seek the long-term contracts so essential to the vitality of the natural gas sector.

And now, more than ever, we must communicate effectively with the Canadian public. Where we envision new industrial development, we must address the 'Not-in-My-Back-Yard' syndrome. Nationally, we must tackle the widespread, but misinformed, perception that our industry is prosperous with deep pockets.

I believe the current public mood presents opportunities, not just hazards. The Persian Gulf conflict has increased public awareness about our industry and the importance of energy security. Petroleum-related capital expenditures in 1991 will help cushion Canada's recession. We can make a clear case that Canadians are the beneficiaries of responsibly developing this country's resources.

In last year's annual report, I identified opportunities for increased industry profitability within our able people, the technology we develop and apply, and relations with our many stakeholders. The past year, while tumultuous, has only strengthened these convictions. But as I also warned last year, we must continue to be alert to the challenges inherent in the intense volatility of crude oil prices. Nothing exemplifies this issue better than 1990's oil price range of approximately \$U.S.15 to \$U.S.40 per barrel.

In ending my term as CPA chairman, I offer my thanks to the many members of our industry for their contributions to the achievements of the association in 1990. They helped make my term of office engrossing and personally rewarding. Our mutual accomplishments are a harbinger telling us that, in many ways, the best years of this industry are still to come. ■



D.D. (Doug) Baldwin

President and CEO
Esso Resources Canada Ltd.

I.R. (Ian) Smyth

President
Canadian Petroleum
Association

resident's Report

No event marked 1990 more clearly than Iraq's misguided and ultimately tragic invasion of Kuwait. The military and political consequences of that adventure received widespread coverage. While governments repeatedly argued that the crisis and the war were not about oil, those events nonetheless were significant to Canada's petroleum industry and therefore this association.

In particular, the rapid run-up in crude oil prices made energy a matter of public concern for the first time in years. As a result, and notwithstanding five years of very tough times, public perceptions once again focused on the profitability of the petroleum industry. And, once again, the industry found itself explaining to governments and the public alike that our economic health depends on much more than a few days of oil prices around the \$40 level.

While the Gulf Crisis led to a blip in public perceptions, for the industry and the CPA it was business as usual. For nearly a decade we have been working with the industry to pare expenses, looking for new and imaginative ways to become more efficient. Especially since '86, one of this association's key goals has been to help the upstream sector reduce costs. Only by so doing can the industry stay competitive in a global marketplace.

Our member companies have worked hard at increasing efficiencies and cutting costs. But governments, which have vested interests in a viable industry, must also participate. They must encourage streamlined regulations and simplify royalties and other government requirements. This key message is one we must continually hammer home - not just in words, but with results.

We do this in several ways. Of most importance, we influence policy. In this area more than any other, the CPA makes a difference. Making submissions to governments and intervening on key regulatory issues generate cost savings. Our interventions represent savings amounting to tens of millions of dollars every year. Our presence is particularly significant at U.S. regulatory hearings, where the CPA is virtually the only organization representing the interests of Canadian gas producers.

And during the 1990s, our influence on environmental and frontier legislation is likely to have an ever-greater impact on the industry. That impact can take several forms. Consider, for example, the Safety Training and Certification Manual for the offshore, duly noted in the Frontier Division's annual report.

Not mentioned in that write-up is that, before the association took the lead in that project, four jurisdictions (COGLA, the Coast Guard and the two offshore boards) each had planned to prepare a safety certification manual. When the association completed its work last year, we had not only developed a manual the industry could live with. We had also eliminated the cost, duplication and complications of having four separate manuals to deal with. Can we quantify the value of that work to the industry? No. Is it valuable? Without doubt.

On the other hand, the value of some activities is easy to measure. For example, this association's oil spill containment and recovery utility, PROSCARAC, helped the industry deal with 26 spills last year. When our equipment came out of the yard, it was just one tangible measure of this association's value. Having our \$3.6 million of equipment available for general use eliminated the need for companies to duplicate major costs in the field.

As every year, in 1990 the association served the industry in countless other ways. Many of our achievements receive comment elsewhere in this publication. Others will never receive public recognition. The key point, though, is simple. This association's focus is to enable the sector to deal with issues as an industry. So doing, we help the industry cut costs.

Because we enable companies to address mutual interests, in the last instance the CPA is the industry working for itself. Thus, our effort in such fields as policy development and research is work which has value beyond the needs of any individual company. The bulk of the work we carry out comes from more than 1200 men and women serving on dozens of boards, committees, task forces and subcommittees. Their professionalism and the enthusiasm with which they carry out their work bode well for this industry.

We are not a healthy industry yet, but the quality and commitment of the people within the sector bode well for our industry's future. As we move into that future, this association and its staff will continue to work toward an environment which will enable the industry to prosper. ■

he Year Ahead

No year in recent memory had more of a good news/bad news quality than 1990. The improvement in oil prices was the year's good news. The bad news was the price volatility that came with it. Market fundamentals yielded to political influences. Oil prices reflected speculation about war and facility damage. Because of the resulting wide price swings, planning and investment decisions were difficult as never before.

The industry's basic economics did not improve. According to the Petroleum Monitoring Agency, average return on capital employed for the first half of last year was only 3 per cent. And even with the crude oil price spike, the year's return is not likely to exceed 5 per cent. By no realistic measure, therefore, is the industry's financial performance acceptable.

And yet the appearance (but appearance only) for 1991 is one of good health. Go-ahead on the TCPL expansion will generate additional gas drilling. Capital and exploration spending may rise as much as one third to more than \$8 billion because of Caroline, the bi-provincial upgrader and the Panuke/Cohasset and Hibernia developments. The ominous down side for the year is the chance of a downward spike in oil prices that will also aggravate weakening natural gas prices. If this occurs, we'll see some curtailment of drilling.

For this association, the 1991 work year will see a strengthening of two trends which go back several years. We will invest the bulk of our budget - some 75 per cent - in natural gas and environment related issues. In addition, we will revisit oil and gas policy in Canada. This year we hope to propose a framework which integrates oil and gas policy with sound environmental policy.



L.H. (Lorne) Gordon

*President and CEO
Pembina Corporation;
Incoming Chairman
Canadian Petroleum
Association*

Natural gas exports and transportation issues will again receive much attention from the association. We will again represent our members before NEB, provincial and U.S. regulatory proceedings. Where export markets are at issue, we will carefully address both core and non-core market issues. We will also intervene in new facilities applications, since these developments have such a major affect on natural gas economics.

We will intervene in TCPL and Westcoast toll hearings, and in hearings on facility expansions. In Alberta, the association will pursue various issues concerning NOVA and the rates of Canadian Western Natural Gas and Northwestern Utilities. In the U.S., the association will participate in rate cases involving Great Lakes, Pacific Gas Transmission, Northwest Pipeline and Northern Natural. In addition, the association will increase its involvement in general U.S. gas policy matters and, in particular, in intra-California issues. Events in 1990 showed the potential impact of California Public Utilities Commission decisions on Canadian producers.

We expect an avalanche of work in the environmental area. By taking the initiative in this area, the association is in an excellent position to be the voice of reason in the environmental realm. By clearly advocating the calm, scientific approach to these issues, the CPA can inform governments early about the implications of environmental strategies.

In the legislative arena, the association expects to continue to respond to federal Green Plan initiatives. Provincially, we must stay abreast of Alberta's reviews of its environmental protection legislation and its Water Resources Act. British Columbia and Saskatchewan are also proposing major reviews of environmental legislation. Staying on top of these issues will be of value to this industry in the year ahead.

The association will also continue to address global warming and other air pollution issues. The CPA will also work on waste management and waste reduction opportunities and on the linkage between human health and the environment.

Finally, this year the industry will implement the recommendations of the Task Force on Oil Spill Preparedness and of the Upstream Petroleum Industry Task Force on Safety. Putting these recommendations into effect will take a toll on the association in both cash and voluntary work-hours from member companies.

While the association will invest most of its cash budget on natural gas and environmental issues, its biggest investment of volunteer hours will be in a comprehensive review of oil and gas policy. Since we last undertook this process in 1983/1984, Canadian energy policy has shifted from government control to an effective, free-market orientation. But the industry has changed drastically, and we believe revisiting this policy could enable us to address issues which have developed since that time. We also believe a current energy policy should integrate environmental considerations. It is with these thoughts in view that we are looking at energy policy for the future.

In general, the review will investigate the partnership between government and industry. What is it, and what should it be? Within that overarching inquiry, we will investigate many critical issues. These will include royalties and incentives, the costs and benefits of expanding pipeline transportation and how such measures as capping gas emissions will affect oil and gas production in Canada. This undertaking will give us guidance for the future of Canada's petroleum industry. ■

Industry Operations

If the first year of the 1990s is an indicator of what is to come, the decade will indeed be trying for the petroleum industry.

The volatility in oil prices was without precedent. Believing the oil price spike that began in August to be temporary, the Canadian industry continued to constrain spending growth. The industry actually intensified efforts to reduce overhead. Despite difficulties created by the price volatility, the rationalization of assets continued. The focus remains on improving the profitability of core assets. Companies continue to sell off peripheral operations.

The volatile oil prices dampened Canadian merger and acquisition activity in the second half of last year, with perhaps the exception of transactions at the junior company level. Of particular note, Gulf Canada cancelled its pending merger with the oil and gas arm of Interhome Energy because the two companies could not agree on fair share value. According to Gulf, the impasse stemmed from an inability to relate share values to the price of oil.

The extra cash flow from higher oil prices improved corporate balance sheets and reduced debt, both of which had priority over reinvestment. While the industry is investing additional funds to replace production and reserves, it is doing so prudently within cash flow constraints. The Canadian industry will not repeat the ill-advised leverage course of the late 1970s and early 1980s.

Drilling: Despite all the tumult, the upstream sector recorded modest growth in 1990. Drilling activity rose 5 per cent to 6100 wells. Nonetheless it was one of the lowest drilling levels in 15 years.

An early spring and heavy rains spoiled drilling plans in the first half of the year. The industry partially caught up in the second half, especially in the last two months after an early freeze-up in northern areas. Rising oil prices helped spur a recovery in oil drilling, but total activity still fell short of original plans.

Rig utilization remained below the 55 per cent break-even level. Even so, the rig fleet shrank only modestly. On the corporate side, several drilling contractors merged their companies to create larger, more sustainable entities. The number of contractors had declined to 51 by the end of the year.

Horizontal drilling in Canada suffered both growing pains and a setback. The setback, which came from a Saskatchewan court decision on a drainage issue, resulted in a government reduction in production allowances. Horizontal well license applications subsequently slowed to a crawl.

Before this decision, Saskatchewan had encouraged horizontal drilling through special royalty treatment. While these fiscal provisions have recently been modified, horizontal drilling continues to be favoured. In combination with generous production allowances, this arrangement will encourage horizontal drilling in the province.

The industry began discussions with the producing provinces to get firm policies in place. In Alberta particularly, the industry wants a policy which will accelerate activity. The issues in all provinces involve production allowances, spacing requirements, royalty treatment and off-target penalties.

Drilling began strongly in 1991, with well licensing up 30 per cent. Barring unforeseen developments, drilling activity will increase perhaps 15 per cent to some 7000 wells.

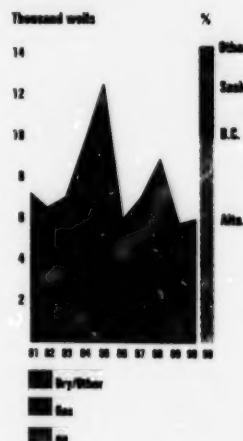
In the offshore regions, drilling will be limited to one or two wells offshore Newfoundland and the Cohasset project offshore Nova Scotia. No drilling is likely in the Beaufort Sea.

Production: Canadian crude oil and equivalent production declined 1 per cent to 264 000 cubic metres (1 660 000 barrels) daily. The reason for the decline was the reduced output of conventional light and medium oil. Higher production of heavy oil and of synthetic oil from the two oil sands mining projects helped offset this drop. There was a slight increase in LPG production.

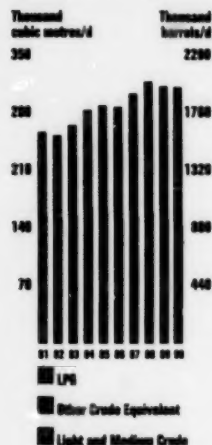
1990 Oil and Gas Prices



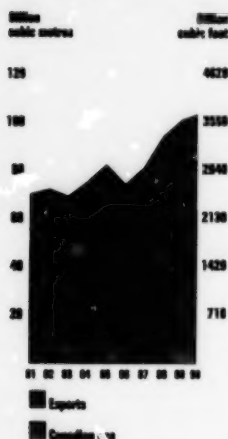
Well Completions



Liquid Hydrocarbon Production



Natural Gas Production



Suncor and Syncrude achieved production records despite facility damage and extended turnarounds. Suncor produced 3 million cubic metres (19 million barrels) of synthetic oil despite a start-up delay following the summer maintenance shut-down. In December, the plant set a production record of 310 000 cubic metres (1.95 million barrels), the best fourth quarter output in its 23-year history.

The Syncrude plant produced a record 9.1 million cubic metres (57.1 million barrels) despite the disruption caused by an explosion and fire in December 1989. The company is forecasting an increase to 9.5 million cubic metres (60 million barrels) in 1991, even with a maintenance shutdown for one of its cokers.

Canada was again a net exporter of oil. Annual exports of 35 million cubic metres (220 million barrels) offset total imports of 32 million cubic metres (200 million barrels).

Marketed gas production in Canada rose 2.5 per cent to 100 billion cubic metres (3.6 trillion cubic feet). Export sales to the U.S. rose while domestic sales declined. The average wellhead price improved only marginally; significant differences in individual prices depended on final market destination.

Land Sales: Last year the industry bought oil and gas rights to 3.6 million hectares in the Western Basin at government auctions. Cash bonus payments were 23 per cent higher than in 1989 at \$599 million. In addition, the industry committed to work expenditures totalling \$19.3 million on 2.3 million hectares of rights offshore Newfoundland, Nova Scotia and in the Beaufort Sea.

Alberta rights accounted for 60 per cent of the acreage and 73 per cent of cash bonuses paid. Bonus payments in the province rose nearly 21 per cent to \$435 million. In British Columbia, a 48 per cent rise in bonuses and a 31 per cent increase in total acreage illustrate the heightened interest in gas exploration.

Major Projects: Major project development will create an investment spike in the upstream sector in 1991. In the west, the list includes the Caroline gas field development and the bi-provincial heavy oil upgrader. In the Atlantic offshore, it includes the Hibernia oil field project and the Panuke/Cohasset condensate project. These developments could drive upstream capital and exploration spending into the \$8 to \$8.5 billion range, compared with an estimated outlay of \$6.7 billion in 1990.

Following a public hearing which set new standards for future major energy projects, the ERCB gave Shell approval to proceed with the Caroline project. The \$825 million development is under way. It includes a new gas processing plant and an innovative underground liquid sulphur pipeline that will link the plant to a new sulphur pellet-forming facility on an existing rail line 44 kilometres away. New technology will ensure continuous 99.8 per cent sulphur recovery from the field's very sour natural gas.

Shell also opened a \$55 million sulphur recovery demonstration project during the year. It is the first facility anywhere designed to process sour gas for its sulphur content. The project aims to confirm the technical and economic potential for commercial development of the Bearberry reservoir, near Caroline. Bearberry reserves contain more than 90 per cent hydrogen sulphide. Together, Caroline and Bearberry represent more than half of established sulphur reserves in Alberta.

Construction activity at the bi-provincial upgrader continued during 1990, and will intensify during 1991. The project is due to start in 1992. This \$1.3 billion plant will produce as much as 7300 cubic metres (46 000 barrels) per day of light synthetic oil. The plant will process 6400 cubic metres (40 000 barrels) per day of conventional heavy crude and bitumen from the oil sands and 950 cubic metres (6000 barrels) a day of a light tops stream from Husky's nearby asphalt plant.

Two major developments began in the frontiers during 1990.

Following protracted negotiations, the Hibernia consortium and the governments of Canada and Newfoundland agreed to begin engineering work and construction on the Hibernia oilfield. Parliament later passed supporting legislation authorizing the federal contribution of 25 per cent of construction costs (to a maximum \$1.04 billion) and loan guarantees for 40 per cent of construction costs (maximum \$1.66 billion). Budgeted pre-production capital construction costs are \$5.2 billion. Production will begin in 1996, with peak production of 17 500 cubic metres (110 000 barrels) beginning in 1998.

LASMO and Nova Scotia Resources have begun to develop the Cohasset and Panuke condensate fields offshore Nova Scotia. The fields will begin production by May 1992. With some modifications, the Gorilla III jackup rig will serve as the production platform for the joint project. Before then, Gorilla III will drill two exploratory wells in the vicinity to find additional light oil reserves near Cohasset.

Production plans call for the recovery of 5.6 million cubic metres (35 million barrels) over a total of six years. The project will avoid the stormy winter months, restricting production to seven months. Estimated pre-production capital spending will total \$160 million.

Government Activity: The only likely impact of the 7 per cent Goods and Services Tax on the petroleum sector will be an increase in overhead costs to handle tax accounting. Because companies will be able to claim input credits for taxes paid against taxes collected and because of the elimination of the manufacturers sales tax, the industry could be slightly better off. No precise calculations are possible, however.

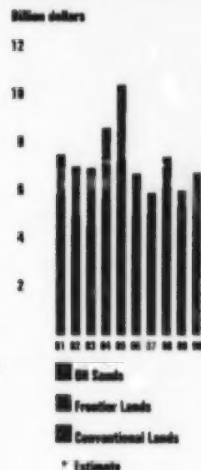
At the urging of small gas producers, the Alberta government modified the Alberta Royalty Tax Credit program. The program uses oil prices as a base, with the tax credit shrinking as oil prices rise. Since gas prices did not move in concert with oil during the Gulf Crisis, this put gas producers at a disadvantage. Producers who earned most of their revenue from gas sales suffered a reduction in ARTC benefits.

In a landmark decision, the National Energy Board decided to maintain the traditional "rolled-in" toll design in which the costs of new facilities are borne equally by all new and old users of the gas transmission system. Intervenors contested this issue hotly during 59 days of hearings. While the issue essentially divided consumers and producers, there were dissidents within each group. The two sides disagreed on a fundamental issue: whether an incremental toll would produce more economically efficient pipeline expansions.

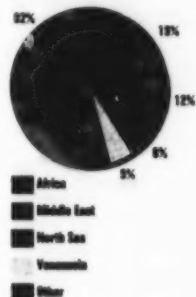
Summary Outlook: The 1991 outlook for the Canadian upstream sector is promising. Normal industry spending is likely to increase 15 per cent, and there will be considerable spending on the major projects described above. In addition, the pipeline sector will make capital investments of more than \$2 billion. The industry will thus make significant contributions to the Canadian economy. It will buffer the economic slowdown and keep certain regions out of recession.

The qualifier, of course, is that oil prices could drop dramatically as a result of the favourable solution in the Gulf. In that case, the industry would not spend all budget funds. Cash flow continues to control industry investment.

Exploration and Development Expenditures



1990 Oil Imports (by source)



he Year in Review

January

- Canada and Nova Scotia proclaim legislation to implement the 1986 Canada/Nova Scotia Offshore Petroleum Resources Accord and appoint a chairman and members to the Canada/Nova Scotia Offshore Petroleum Board. With these proclamations, the legislative framework to implement the 1986 Canada/Nova Scotia Offshore Petroleum Resources Accord is complete.

February

- The California Public Utilities Commission issues a decision defining conditions for the construction of new gas pipelines and issues proposed changes to make the natural gas market more competitive. Alberta's gas industry argued that this decision was unfair and would distort the marketplace. In September, the commission agreed with the industry and altered its decision.
- The federal government's 1990 Budget announces the federal government's intention to privatize Petro-Canada and withdraws federal support for the OSLO oil sands project. The Budget also terminates the Canadian Exploration Incentives Program, a program which provided grants for exploration expenditures to investors in flow-through shares.

March

- The National Energy Board announces that it will no longer use benefit-cost analyses as a factor in determining whether proposed natural gas exports are in the national interest. The Board continues to examine export contracts to ensure that they have commercial substance and are likely to be durable over their term, but agrees with industry that letting the market decide is the best way to serve the public interest.

- The federal government auctions three parcels of Beaufort Sea rights totalling more than 100 000 hectares for work expenditures of \$5 150 000. A later call for nominations in the western Beaufort generates no interest.

April

- The federal government and Dene/Metis leaders initial an agreement completing land claim negotiations with the Dene/Metis of the Northwest Territories. Within months the agreement unravels as some of the aboriginal groups reconsider their positions, however. In November, the federal government announces that it will negotiate Dene and Metis claims regionally rather than as a single large area.

June

- Saskatchewan announces changes to its royalty and tax policies. In general, these changes improve oil and gas economics in the province.
- The federal government announces that it will contribute up to \$45.5 million towards completion of engineering studies for the OSLO project, but will not otherwise subsidize the project.

July

- The Environmental Impact Review Board recommends against a Gulf Canada drilling programme in the Beaufort Sea, citing lack of preparedness on the parts of both Gulf and government to deal with a major oil well blowout during the open water season.

- The Energy Resources Conservation Board issues an information letter providing details of how Alberta's new ethane policy will be applied. The policy permits companies to construct new field ethane extraction plants, thus shifting away from the earlier policy of having all ethane removed at straddle plants on major pipelines.

August

- The provincial government transfers British Columbia Petroleum Corporation's marketing operations to CanWest Gas Supply Inc., a private company owned by B.C. gas producers. CanWest's mandate is to market natural gas aggressively. Stripped of its marketing function, BCPC's new role is to monitor the deregulated natural gas marketplace and to perform certain administrative functions under the province's new natural gas legislation.
- Iraq invades Kuwait, causing oil prices on world markets to rise rapidly. Under the auspices of the United Nations, a coalition of nations including Canada and led by the United States begins to set up military operations in Saudi Arabia. The allied nations enforce U.N.-imposed international economic sanctions and threaten war if Iraq does not withdraw from Kuwait.

September

- Manitoba announces horizontal drilling incentives which provide a special Crown royalty or freehold production tax holiday volume for horizontal wells drilled before 1992.
- Canada and Newfoundland announce that development of the Hibernia oilfield will begin immediately. Years of negotiations between the Mobil-led consortium and the governments result in a federal commitment to contribute 25 per cent of production costs (to a maximum of \$1.04 billion) and loan guarantees for 40 per cent of construction expenses (to a maximum of \$1.66 billion.) Scheduled production start-up is 1996, with peak production volumes of 15 500 cubic metres (110 000 barrels) per day to begin two years later.

October

- The federal government introduces a bill which will provide for the sale of shares in Petro-Canada to the Canadian public. The legislation limits non-resident ownership to no more than 25 per cent of the publicly available shares and prevents any individual from owning more than 10 per cent.
- British Columbia announces major revisions to the province's natural gas export policies. The changes include a minimum price for royalty collection amounting to 80 per cent of the average price for all British Columbia gas sales during the previous three months. The province drops other border price restrictions. In addition, the province allows more generous reserve allocations for export licenses (maximum 15 years).

November

- The National Energy Board announces that all facilities of TransCanada's 1991/1992 expansion project will be rolled into TransCanada's rate base for toll purposes, with all shippers therefore sharing the cost of the expansion.

December

- Alberta announces temporary changes to the Alberta Royalty Tax Credit Program. The changes remove a disadvantage to gas producers who have not benefitted from higher oil prices (basic rates are tied to oil prices only.) ■

I.J. (Irv) Koop

Senior Vice President
BP Canada Inc.



General Committee on Natural Gas Policy

Pipeline expansion projects and pipeline tolls and tariffs were the committee's main focus in 1990.

The expansion of existing pipeline capacity reflected the success of aggressive marketing in recent years.

Regulators reviewed terms and conditions for access and toll design for many of the pipelines serving the expanded markets and the CPA actively participated in all of these proceedings.

Predominant was the NEB's 100-day hearing of TransCanada Pipelines' \$2.6 billion pipeline expansion dealing with tolling for the expansion project. It also considered economic feasibility tests applicable to expansion projects.

In its decision, the NEB opted to continue the rolled-in methodology that it has followed for many years. The Board also rejected all proposed tests for economic feasibility. The Board has approved a portion of the applied-for facilities, and will probably approve the balance early in 1991.

The association also monitored developments and held discussions with the sponsors of the competing \$700 million Altamont and \$1.1 billion Alberta Natural Gas and Foothills/Pacific Gas Transmission projects. Both projects propose to provide new capacity to California during 1993.

In a related matter, CPA participated in an extensive industry review of the tariff and toll design for the ANG pipeline, including the terms of access. This review formulated a new uniform tariff acceptable to both "old" and "new" shippers.

On the Westcoast system as well, facilities expansion policy was the principal focus. The CPA was active in a year-long task force created to develop a transmission facilities expansion policy for raw gas. Task force members did not reach consensus, and the NEB referred the issue to the Westcoast toll hearing for resolution.

Altogether the association participated in four NEB public hearings in 1990. In addition to the TransCanada hearing, it involved Westcoast's 1991 tolls, expansion of the Westcoast McMahon gas processing plant, and TQ & M Pipelines 1991 and 1992 tolls. The association also submitted comments to the Board's review of its Market-Based Procedure.

A major review of NOVA's tolling methodology began in 1990 and will continue during 1991. The association was also an active participant in the Industry-NOVA Task Force and the NOVA Facilities Liaison Committee. These groups dealt with tolling methodology, third-party charges, B.C. gas, capital expenditures, system reliability, facilities design and several other matters.

B.C.'s Natural Gas Removal Policy and associated complaints procedures for long-term removal permits are viewed as a positive step toward full deregulation of the natural gas industry. However, the association had reservations about the average market price for royalty collection, a government gas price monitoring system, and an administrative levy on all gas sales.

U.S. gas matters gained a higher profile during the year. CPA participation in selected U.S. proceedings serves two primary purposes: First, to be sure that rates charged to transport Canadian gas on U.S. pipelines are fair; second, to reduce regulatory impediments that discriminate against Canadian gas.

The association addressed cost allocation issues and filed testimony advocating mileage-related rates in Northwest Pipeline and Northern Natural rates cases. Both Northwest and Northern had advocated large zone postage-stamp rates that would discriminate against Canadian gas. The Northwest proceeding went to hearing, and a FERC decision is likely in early 1991. In the Northern proceeding, a tentative settlement reduced the size of the market area zone and lowered the interruptible rate, even though Northern had requested a large increase.

In the Great Lakes and Pacific Gas Transmission proceedings, rate design and cost of service were the CPA's main concerns. The Great Lakes settlement resolved all but three issues. Of particular importance to the industry, FERC reduced the applied-for rates by 13.5 per cent (U.S. \$20 million). The hearing on the reserved issues began in December 1990. The CPA filed testimony advocating full fixed variable rate design.

At the PGT rate proceeding, settlement discussions have continued into 1991. The CPA filed testimony advocating full fixed variable rates and will address other cost-of-service issues. In a separate proceeding, the CPA submitted comments respecting capacity brokering on PGT. In addition, the CPA is becoming active in the CPUC capacity brokering proceeding dealing with intra-California pipelines and filed testimony in early 1991.

In 1991, the association will continue to represent its members in NEB, provincial and U.S. regulatory proceedings. These will include TransCanada and Westcoast tolls hearings, and additional facility expansions on both pipelines. In Alberta, the association will pursue various issues concerning NOVA and the rates of CWNG/NUL. In the U.S., the CPA will participate in rate cases involving Great Lakes, PGT, Northwest Pipeline and Northern Natural, and in general U.S. gas policy matters. In addition, the association will increase its involvement in intra-California matters during 1991 because of the impact of CPUC decisions on Canadian producers. ■

T. Don Stacy



Chairman and President
Amoco Canada Petroleum
Company Inc.

General Committee on Oil Policy

The Crude Oil Committee focused on regulatory matters arising from the activities of oil pipeline systems under the jurisdiction of the National Energy Board. The IPL application to the NEB for the construction of natural gas liquids storage facilities generated considerable interest, and resulted in a significant time commitment by members of the Toll Methodology Subcommittee. Although CPA was not an active intervenor, the association did submit final argument commenting specifically on the Facilities Support Agreement and unapportioned access.

The committee made a special effort to improve communications with the pipeline sector to alleviate problems before the hearing stage. This was most evident in the TransMountain Pipeline Class 2 application. TransMountain and CPA resolved tolling for tankage and terminalling facilities prior to the hearing. Other regulatory issues addressed by the committee included an IPL Section 58 application and the NEB Toll Adjustment Procedures. At year end, the committee was reviewing the options on the IPL Sarnia to Montreal extension. There were no class 3 hearings in 1990, but the NEB has scheduled one each for IPL and TransMountain in '91.

Besides the regulatory aspects of its activities, the committee continued to participate in the ERCB's Modified Prorating Plan Task Force. An update of the Crude Oil Producibility Forecast showed a slight decline from the 1989 forecast. The committee devoted considerable work to the Crude Oil Movement System/EDI project during the year. A pilot should be operating early in the second quarter of 1991.

The Enhanced Recovery Committee worked hard on changes proposed for Section 11 (formerly Section 4.2) of the Alberta Petroleum Royalty Regulations with Alberta Energy. The suggested major policy changes would have dramatically reduced the economic viability of enhanced recovery projects. The committee successfully negotiated a more moderate approach, thus reducing the impact on EOR projects. Discussions are proceeding on the implementation phase.

While oil sands activities have slowed considerably, the Oil Sands and Heavy Oil Committee has turned its attention to formulating a framework for the sustainable development of Canada's oil sands and heavy oil resources. This is indeed a challenging task, considering the current and foreseeable price environment and the lower intrinsic value of the product combined with high capital requirements and operating costs.

In this context, the committee has expressed concern about certain provisions in the revised oil sands lease tenure regime contemplated by the Alberta government. The committee participated in the development of "Alberta Recommended Practices" for oil sands operations. It also dialogued with Alberta Energy and Environment concerning construction of the North Saskatchewan River water pipeline. The future focus will be on developing a generic policy for oil sands development (especially *in situ* production), including environmental aspects. ■

General Committee on Safety, Health and Environment

Concern for the environmental, health and safety aspects of our industry continued to grow in 1990. Heightened public interest in these matters led to another round of major government initiatives. By offering insightful comment, the CPA continues to be a respected industry leader in the environment. We are also a major voice in the provincial and national dialogues that are an integral part of the policy development and implementation process.

Evidence of the association's growing stature came last year at the first presentation of the provincially sponsored Alberta Environment Awards. The association received the award in the Business, Industry or Government Agency category.

In the area of safety, the major activity for 1990 continued to be implementation of the recommendations of the Upstream Petroleum Industry Task Force on Safety. Most UPITFOS working groups have completed individual reviews and are looking for efficient ways to make them part of daily operations. Another high priority of the Safety Committee is the development of an industry standard for fire retardant clothing. This work began in 1990 and will continue in 1991.

The Occupational and Environmental Health Committee focused on linkages and possible linkages between environmental protection and human health. The year saw the completion of studies on the effects of sulphur dust inhalation and an evaluation of a light hydrocarbon dosimeter. The committee also commissioned an ergonomic assessment of back problems experienced by light duty truck operators.

The Environmental Research Advisory Council worked with Environment Canada and various Alberta government staff on co-funded research projects. These included groundwater remediation, oil industry waste characterization and impacts of lime and sulphur dust on vegetation. A successful workshop helped publicize ERAC research.

The Environmental Standing Committee and its subcommittees had a busy year. Among the activities was a response to Environment Canada's Green Plan, participation in the Clean Air Strategy for Alberta, review and comment on Alberta's Environmental Protection and Enhancement Act and on the Canadian Environmental Assessment Act and an appearance before the House of Commons Environment Standing Committee. The association encouraged a consultative regulatory framework. As the federal government undertakes implementation of the Green Plan, the CPA will continue to play a major role in the consultation processes.

The newly-formed Air Issues Task Force addressed global warming, sulphur dioxide reductions, NOx/VOC controls and reviewed the three working group reports of the International Panel on Climate Change. The task force has taken several steps at the provincial, national, and international levels to enable CPA member companies better to respond to these concerns. Included are evaluation of energy efficiency opportunities for the upstream industry and developing industry inventories for a variety of global warming gases. Jointly with the Alberta government, the association concluded a study on the feasibility of reducing emissions within Alberta through economic instruments.

The committee also began to develop an implementation plan for recommendations of the Task Force on Oil Spill Preparedness (TFOSP). To put the TFOSP plan into effect, the Prairie Region Oil Spill Containment and Recovery Action Committee (PROSCARAC) hired a manager late in the year. One of the first visible effects of implementation was the publication at year end of an oilspill newsletter, *The Oscar Report*.

The CPA also completed its **Production Waste Management Handbook**, which codifies the classification, transportation and management of wastes from upstream operations and assesses the capability of service companies to properly handle, treat and dispose of wastes from operations.

The high level of public concern for safety, health and environment issues will continue. The work completed to date will better position the association to address these concerns. ■



D.E. (Dave) Powell

Executive
Vice President and COO
Home Oil
Company Limited

D.G. (Doug) Stoneman



Executive
Vice President, Resources
Shell Canada Limited

General Committee on Economics and Statistics

The year's issues covered a broad range. Levels of taxation and royalties were one area of concern; the complexity of taxation and royalty systems was another. Electronic data interchange took important steps forward.

The Customs and Sales Tax Committee spent the year dealing with the complex issues surrounding the implementation of the Goods and Services Tax. Late legislation complicated joint venture election matters. However, the committee obtained rulings and changes that would make the favoured election simple and workable plus meet the goals of all parties. Early in 1991 the committee expects resolution of its concern about continuous transmission of Canadian oil and gas through the United States and back into Canada without GST.

The Income Tax Committee's 1990 prebudget submission included many unresolved issues and raised some new concerns. Discussions with Revenue Canada dealt with farmouts and the effects of asset disposition. Other important issues included the handling of reclamation costs, simplification of the Tax Act and the mid-year technical bill. The committee submitted the 1991 prebudget submission to the Department of Finance in December.

The Economics Committee found that the issues handled during 1990 were both diverse and complex. Royalties remained a major topic, with the committee reviewing royalty issues in Alberta, British Columbia, Saskatchewan and the frontier areas. The committee also considered Alberta's Section 4.2 royalty relief changes and simplification of the province's gas royalties, gas transportation issues, the Federal Green Plan and tradeable environmental permits.

The committee used the CPA cash flow model to assess the impact of the oil price rise in the second half on the upstream industry. The resulting analysis showed that the higher prices would only marginally improve industry's rate of return on capital employed over the low rates of previous years. The association communicated the results to governments and other interested parties.

The Realty and Mineral Tax Committee worked on ways to improve the fairness of property tax collection. Increased assessments and changes in methods of allocation in all three western provinces were the main targets. In Alberta, the initiative to standardize municipal education and property taxes continued throughout the year in co-operation with other industries.

The Reserves Committee again released its annual estimates of Canada's oil and gas and gas by-product reserves. Changes to the on-line database permitted the merging of annual pool production data for British Columbia, Alberta and Saskatchewan for the first time. This reduced the workload on committee members and made the vast database more manageable.

The Statistics Committee oversaw publication of the 36th edition of the *CPA Statistical Handbook*. A new publication, *CPA Petro graphs*, was well received. It provides a graphic treatment of industry trends. The committee participated with Statistics Canada and the Petroleum Monitoring Agency in the annual survey of industry upstream expenditures. It also updated the Alberta Cost Escalation Study.

The Accounting Committee participated in two task forces, one dealing with removal and restoration costs and the other with the Goods and Services Tax. The Removal and Restoration Cost Task Force is a multifaceted group created to address the pronouncement by the Canadian Institute of Chartered Accountants that companies estimate future restoration costs and amortize them over the life of the facilities. Committee involvement in the simplification of the industry's reporting requirements is part of a larger effort to reduce industry's general and administration costs.

Interest in EDI continues to grow within the petroleum industry as EDI's potential for cost efficiencies gets wider recognition. This led to an active year for the Electronic Data Interchange Committee. The committee coordinated EDI developments within Canada's petroleum industry with the American Petroleum Institute's and expanded its contacts with other Canadian EDI organizations. The new Application Coordination Subcommittee provides a coordinating function for the various EDI application groups within the industry. The Standards Subcommittee supported the new applications groups in developing standard industry codes. The Education/Promotion subcommittee published an EDI newsletter, **EDImatters**, and began planning a major EDI conference.

The committee also offered support to a Natural Gas Committee EDI initiative which will enhance the exchange of gas-related business information.

Special Report:

The Industry's Economic Outlook

Since the 1970s, uncertainty and volatility have characterized the economic climate for the oil and gas industry. The industry had to adapt to continually changing circumstances. These included a period of intense government intervention and, later, a return to market forces. If the start of the 1990s is a sign of what lies ahead, industry should prepare for continuing volatility and an uncertain planning environment.

While the interventionist policies of the 1970s and 1980s are gone, the administrative complexities which accompanied them remain with us. Cutting costs is the major challenge facing explorers and producers, and governments and regulatory agencies must join forces in this battle. With the aging of oil and gas fields which characterizes the maturation of the Western Basin, industry costs are on the rise. This poses a demanding test to management skills and technological improvements. The Canadian oil and gas industry's standing as a marginal cost supplier makes the challenge even harder.

Despite rigorous efforts, the industry's financial performance remains wanting. Rate of return on capital employed has lagged well behind those of other industries for too long and has reached unacceptably low levels. To remain attractive to investors and capital markets, earnings must improve. And this will take the form of cost reductions, increased efficiency, technological innovation and corporate restructuring. In addition, all parties would gain if governments developed fiscal regimes that recognize two basic developments. First is the rapid maturation of the Western Basin; second, the fiercely competitive nature of petroleum investment.

Industry Costs: The industry's cost structure is increasing on two fronts. The first has to do with the aging of the Western Basin. With the aging of western Canada's oil fields, the industry needs more wells to maintain output. For example, the average productivity of conventional oil wells in Alberta has declined by more than 50 per cent in the last 10 years (Figure 1). The number of operated wells has increased by more than 80 per cent in the same period. Yet crude oil production has declined. The result? Operating costs have increased from 20 per cent of gross revenue to nearly 40 per cent.

Figure 1
Alberta per Well Production

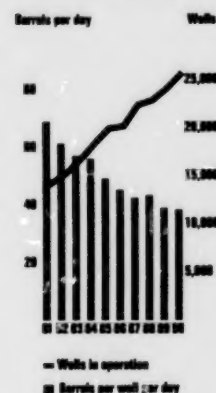
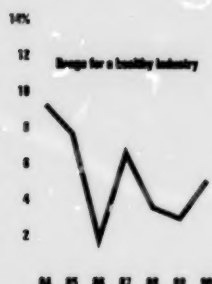


Figure 2
Industry Return on Capital Employed



While the industry has been a leader in environmental management, environmental demands on the sector are constantly rising. This has given rise to significant cost increases. Ultimately these costs must be borne by energy system users. Environmental standards vary drastically around the globe, and Canada's high standards have presented the industry with a major cost challenge.

Economic Strength: Ironically, the real average price of oil and gas production in 1990 in Canada was no different from the real average price realized in 1950. Yet the industry's other dimensions have all changed drastically.

Figure 2 illustrates the low rates of return on capital employed in Canada's upstream oil and gas industry. Since the mid-1980s, industry returns have declined to less than half the levels necessary for a healthy industry. This is the range needed to attract investment capital in a competitive, international market.

The petroleum industry will correct the situation. To stem rising costs and unacceptable returns, companies are pursuing asset rationalization and organizational restructuring. Companies are selling and swapping interests in properties which account for a small percentage of revenues and a disproportionately large share of overhead.

Another strategy to improve financial performance involves flattening organizational structures, and reducing staff and overhead. These measures are cutting operating costs, but they present an immense challenge - to improve organizational effectiveness and individual productivity.

Strengths for the Future: Current efforts are all directed towards renewed economic health and vigour. The industry still has a richly endowed resource base which can provide attractive investment opportunities for years to come. It has a broad infrastructure of production and transmission facilities. And it has access to the largest energy market in the world, both because of proximity and through the Free Trade Agreement. The industry also enjoys skilled management, skilled people and advanced technology. Because of these strengths, there is confidence that the industry can cope with the new era of low prices.

But governments must also participate in the new dimensions of the industry. An appropriate fiscal regime would foster the economic development of resources based on the discipline of the market. How industry interacts with government also deserves scrutiny. Designed for a different business environment, many regulations and reporting requirements are outdated. They require reshaping for the 1990s.

A return to economic health for the industry will not come easily. It will be a challenge to all who stand to benefit from Canada's resource endowment, especially since development in the future must be sustainable and environmentally sound. But it can be done. The job now is to get on with it. ■

General Committee on Industry Operations

The many disciplines grouped under the General Committee on Industry Operations naturally involve a wide range of activities. The year 1990 was no exception.

Upon recommendation by the Communications Systems Committee, the association took out membership to the Radio Advisory Board of Canada, one of the principal advisory boards for the CRTC. Through this representation, for example, CPA member companies have received advance notification of proposed changes to CRTC regulations designed to reduce overcrowding on the radio band spectrum. The ongoing deregulation of the communications system promises cost reduction for the industry. The committee will continue its careful watch of developments.

The Drilling Committee participated in the ERCB's Drilling Waste Review Committee. This committee consists of regulatory and industry representatives interested in protecting the environment from the adverse effects of solids and wastes present in drilling fluids. The committee developed guidelines for safe, efficient ways to dispose of drilling mud wastes. Of particular concern are cuttings and fluids from oil-based and salt-based mud systems.

The low tolerances suggested by DWRC for the variety of elements remaining in mud wastes raised industry concerns. To get a better perspective on the base data, the industry funded the Sump Fluid Sampling and Analysis Project. Solids and fluids found in 100 drilling sumps randomly selected around Alberta were sampled during the year. Lab analysis is continuing. The final report will help DWRC develop more practical and cost-effective sampling and fluid analysis protocols.

In cooperation with the Frontier Division, the committee provided valuable input to the Beaufort Sea Joint Steering Committee. The steering committee's mandate is to respond to the federal government's Environmental Impact Review Board report regarding future drilling in the Beaufort Sea.

The Geophysical Committee focused on developing a CPA position on Integrated Resource Management in the Forest Management Areas in Alberta in cooperation with three other industry associations. The joint position paper contains specific recommendations to the government on operations in Forest Management Agreement areas. The industry's principal recommendation states that the Crown should be the sole landlord of surface lands, while the resource industry and the forest companies be equal tenants. Right-of-entry charges on Crown lands should therefore go to the Crown rather than to the FMA holders.

Constructive discussions between the Geophysical Committee and B.C. government officials in Fort St. John and Victoria continued. However, negotiations on compensation for British Columbia trappers are on hold. The committee has proposed a Trapper's Compensation Fund patterned after the successful one in Alberta.

The Mineral Rights Committee provided further input to the proposed changes to oil sands tenure regulations awaiting legislative approval. A strong letter to the Alberta government protested the failure to consult industry before announcing the Metis Settlement Accord. There is serious concern that the provisions of the accord may reduce exploration activity levels on Metis lands.

The Surface Rights and Land Use Committee discussed amendments to land titles acts with all levels of government in B.C. and the prairie provinces. These discussions continue. Together with the Mineral Rights Committee, the committee provided input to the joint industry task force on orphan wells. The task force has responded to the ERCB proposals for reducing public risk for the financial responsibility of abandoning wells left behind by insolvent operators. ■



J.J. (John) O'Connor

President and
General Manager
Mobil Oil Canada

I.R. (Ian) Smyth

President
Canadian Petroleum
Association



General Committee on Public Affairs

The future of Canada's petroleum industry depends as much on fair government policies as it does on sound business decisions. The good will and understanding of Canadians and their governments is necessary to favourable policy. Earning and keeping that good will and understanding requires a constant flow of reliable and timely industry information. Simply put, the industry's future rests on doing a good job and getting credit for it.

Providing Canadians and their governments with the facts and the reasons for developing sound, balanced, public policies pervades CPA activities. In environmental areas, the most senior councils accept and expect a CPA presence. The CPA develops and gathers sound scientific evidence to support industry's case in provincial and national forums, and to prepare Canada for international participation. In 1990, the association responded to Environment Canada's "Framework for Discussion on the Environment" before final development of Canada's Green Plan.

Doing a good job on the economic side requires cost reductions. Royalties and various taxes are a significant portion of industry costs. Public and government understanding of industry economics is basic to responsive public policy. Assessing the industry for a

major part of government revenues is no longer an option in the changed price environment. However, with encouraging policies, the industry still holds potential for stimulating the economy over the long term. The CPA has long been the authority on industry economics in Canada. In 1990, the CPA added a new publication in graph form as a supplement to the CPA Statistical Handbook. CPA Petro graphs provides a striking, visual picture of industry activities and economic results.

The association's various communication activities help develop productive relationships with our business partners - governments, the public and interest groups.

The CPA Review and the annual report continue to be key communicators with Canada's opinion leaders. Supplementing these are a wide range of pamphlets and brochures which are in demand for use by the public and within industry.

The National Journalism Awards continue to keep us in touch with news rooms across Canada. The purpose is to encourage accurate, informed reporting about our industry. The program brings us face to face each year with many of Canada's top journalists. The many telephone conversations and interviews which take place each day between media and the association attest to our reputation for informed comment.

The annual CPA/CBC triathlon continues to be a highlight of Environment Week in Alberta. CPA continues to encourage the SEEDS energy and environmental literacy programs in Canadian schools. ■

ipeline Division

The pipeline industry continued to respond to changes in the oil and gas business as well as to changing regulatory, safety and environmental legislation. The division has been a leader in developing pipeline industry positions on key issues.

A major concern continued to be the duplication of regulatory agencies' responsibilities and their impacts on the industry. We will continue to advocate "single window" approaches as the most effective means to respond to regulatory needs.

The division continued to measure and promote safety within the pipeline industry by sponsoring the fourth CPA Pipeline Conference, including its annual Pipeline Safety and Performance Awards. During 1991, the focus will be to complete the implementation of Upstream Petroleum Industry Task Force on Safety recommendations.

The 1989 Oil Performance Review showed an increase in the kilometres of pipelines in service, but a slight decrease in total delivered volumes. Compared with the previous 10-year average, repair and cleanup costs were higher. Spills reported were up slightly, but average volumes spilled were down.

As in 1989, environmental issues continued to dominate many division activities. The division was a major contributor to the CPA's submission on Bill C-78, the federal government's act to establish an environmental assessment process, the CPA's submission on Environment Canada's Green Plan and Alberta Environment's draft Environment Protection and Enhancement Act. This involvement will continue as these regulatory initiatives evolve. Also, the division published pipeline environmental audit guidelines and reclamation guidelines and participated in the implementation of oil spill preparedness (TFOSP), work which will continue into 1991.

In cooperation with the Alberta government the division supported several studies on soil issues related to pipeline construction. This work will continue through 1991. In addition, the division sits as a member of an industry/government committee established in 1990 to deal with pipeline related environmental issues.

We supported several submissions to the National Energy Board, by working closely with other CPA committees on issues of mutual interest such as NEB cost recovery, tolling matters and negative salvage. The division continued to liaise with the NEB on applications, environmental screening requirements and improvements to the regulatory process.

The division completed its standard facilities crossing agreement document which simplifies day-to-day industry land activities. It also began updating a pipeline right-of-way field practices booklet for field personnel.

Work with the Canadian Standards Association continued to finalize and implement standards for leak detection system standards. The division initiated a study on the effectiveness of leak detection systems, scheduled for completion in 1991. At the request of the ERCB, the division established a task force to review leak detection issues including the association's recommended practices for leak detection systems.

Responding to ERCB requests, the division commented on proposed changes to the Alberta Pipeline Act regulations, proposed informational letters and procedural guidelines. Also, a task force coordinated the development and construction of an HVP training course and facility. Although this facility received funding from HVP operators, the division was instrumental in support of its development. ■



B.J. (Bernie) Bradley

*Senior Vice President
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W. B. (Wes) Baker

General Manager,
Engineering
Home Oil Company Ltd.



British Columbia Division

During 1990, deregulation of the oil and natural gas industry continued to stimulate exploration and development in northeastern British Columbia. Anticipating new market opportunities, land bonuses and drilling increased significantly. Recent discoveries continued to add to British Columbia's gas reserves, spurring major gathering system and processing plant expansions.

Significant new deep gas discovery areas included Sukunka and Klua. Drilling in the Ring/Border area also reached record levels, confirming the presence of a major shallow gas discovery.

The division's activities continued to foster communication between the oil and gas industry and the government. Frequent meetings with officials from government departments and members of the B.C. legislature discussed plans and reviewed policy and regulation changes.

The division provided a detailed analysis of the Energy Ministry's proposal to change the province's oil royalty regime. While we strongly supported the principles of administrative simplicity and more market-driven activity, the proposed changes could have led to a net increase in industry royalties. In June, the ministry decided not to pursue the proposed changes.

In November, the B.C. government made major revisions to its natural gas export policy. As the government developed its revised policy, both the division and the association's Natural Gas Policy Committee were involved. The new policy put more emphasis on market forces, freeing gas buyers and producers to follow commercial trends. It provided more flexibility in setting the gas reserves required for a long term export certificate. And it introduced a minimum gas price for calculating royalties; this allowed the province to drop previous border price restrictions.

The outlook for British Columbia natural gas is promising in both export and domestic markets. In August, the British Columbia Petroleum Corporation completed the transfer of its marketing operations to CanWest Gas Supply Inc. One result of the privatization will be new markets for B.C. gas. New residential and commercial markets will also open with the completion of the Vancouver Island Pipeline in late 1991.

Increasing production of B.C. gas has prompted Westcoast Energy to increase the capacity of the processing plant in the Fort St. John area and to apply for gathering system and main pipeline expansions.

Natural gas development is having a positive impact on the provincial economy and continues to have great potential. As new developments take place, environmental issues are coming more and more to the fore. Staying involved in these deliberations will be a major challenge for the division in the years ahead. ■

Saskatchewan Division

There was one clear success story in Saskatchewan in 1990: Horizontal drilling. This was the direct result of favourable provincial royalty treatment. To put the year's total of 123 horizontal wells in perspective, the cumulative number of horizontal wells drilled in the province is 135. Last year's Saskatchewan total was almost twice Alberta's total of 77.

The explosion in horizontal drilling activity and a related court challenge created an urgent need for new regulations. The division is participating in an industry-government committee to work out the details of new well spacing regulations for this rapidly-emerging technology. The forthcoming regulations may well be a model for other provinces.

In Saskatchewan the most important issue is the need for our industry to improve profitability. Third and fourth quarter oil price aberrations aside, the trend in the province is a decreasing margin between oil prices and operating costs. And market fundamentals suggest that oil prices are not soon likely to reverse this. Financial health therefore hinges on the ability of our industry to control or lower operating costs, a formidable task. To be successful, industry will require provincial government cooperation.

Our industry has had mixed success in stabilizing those operating costs it does not directly control. On the positive side, our industry has continued to work with Saskatchewan Power Corporation on oilfield electricity rates and policy. As a result, near-term oilfield rates will probably remain relatively flat. The provincial government has selectively continued certain royalty provisions to encourage drilling activity. The royalty regime for EOR projects recognizes the high cost and risk nature of these operations.

On the negative side, last year the province imposed a new royalty on solution gas production and placed an arbitrary limitation on compensation for Crown-acquired lands. In addition, we have concerns about the cost to industry of some government services. The industry also faces higher costs to comply with new environmental initiatives.

In the year ahead, we believe continued consultation between our industry and the province can improve the partnership we need to realize mutually desirable goals. ■



G. L. (Gordon) Need

Director, Engineering
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J. A. (Jim) Kelly

Vice President,
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Mobil Oil Canada



Frontier Division

Exploration activity in the frontier regions continued at low levels during 1990. Wells spudded included 12 in the Northwest Territories and one offshore Newfoundland. The development of oil finds offshore Newfoundland and Nova Scotia finally went into motion.

In September, LASMO Nova Scotia Limited and Nova Scotia Resources Limited received regulatory approval to develop the Panuke-Cohasset condensate fields offshore Nova Scotia. On average, this \$565 million project will produce 4750 cubic metres (30 000 barrels) of light oil per day during a seven-month production season. The project will go on stream in 1992.

Also signed last September was the final agreement among governments and field owners for development at the Hibernia oilfield offshore Newfoundland. Engineering and construction work is underway. Hibernia will reach plateau production of 17 500 cubic metres (110 000 barrels) per day in 1988.

These projects will result in increased activity for the CPA committees. Particularly affected will be those managing the industry's relationships with the fishing industry, environmental effects monitoring, safety, and training initiatives.

The Frontier Division together with CAODC, COVOA and government agencies completed the **Canadian Offshore Petroleum Industry Qualifications Safety Training and Certification (Drilling) Manual** during the year. This resulted from an industry-government effort to develop and maintain a national standard for safety training in the offshore. The manual is a comprehensive reference work for offshore safety training during drilling operations.

The governments of the Northwest Territories and the Yukon filed their responses to the Northern Accord Agreements in Principle by mid-year. The division developed a comprehensive response to both positions. While considerable progress has taken place, much remains to be resolved before the governments can fully implement the accords.

Also in the north, native land claims settlements received a setback when the Dene-Metis Assembly rejected the Agreement in Principle. Discussions are now under way between DIAND and native leaders to negotiate regional claims in the Delta and Sahtu areas. Implications to CPA members due to the change from a comprehensive claim to a regional claim are unclear. The division will continue to monitor the situation.

In its report to COGLA, the Environmental Impact Review Board established under the Inuvialuit Final Agreement recommended against Gulf's drilling program proposals for the Beaufort Sea. In response, a joint CPA-government-Inuvialuit task force began to address the concerns expressed by the EIRB. An interim report released in December showed progress. The final report is due in the spring of 1991.

During 1990, member companies appealed decisions on two significant discovery areas to the Oil and Gas Committee(s) established under the Oil and Gas Production Conservation Act. The companies involved benefitted from a legal opinion and other work by the Frontier Division on this matter. These appeals are still awaiting resolution.

In mid-year, the federal government introduced the Canadian Environmental Assessment Act, legislation which will have a major impact on frontier development. The division led a task group to develop an industry response. CPA representatives made a presentation to the House of Commons Special Committee in late November. The division awaits the opportunity to review amendments to the original legislation, and to review the regulations under the Act.

The ESRF program remained active during 1990 with an approximately \$1 million program. The 1991 program will probably have a similar budget.

The Task Force on Oil Spill Preparedness tabled its implementation plans in September 1990. TFOSP charged offshore acreage holders in the Frontier Division with responsibility to carry out the implementation plan for the offshore regions. A new Frontier Oil Spill Committee was struck and approved a \$930 000 budget for its 1991 program.

To develop an improved rights issuance process for northern Canada, the Frontier Division held several discussions with government regulatory agencies. This initiative should result in an industry-driven process, with calls for rights nominations at regular intervals.

In May, the division sponsored a workshop in Fairmont, B.C. with the theme "Bringing it to Market". Some 150 government, industry and public representatives heard keynote addresses from CPA Chairman Doug Baldwin and the Honourable Jake Epp, Minister of Energy Mines and Resources.

Speakers reviewed the current situation in the frontier on several fronts: supply, demand, economics, new production technology, regulatory regimes, oil spill prevention and response, and new directions in public consultation. These workshops have been successful in providing a forum for developing better understanding among industry, government regulators and public interest groups.

Thus 1990 was again a busy year for the division. There are many federal, provincial, territorial and regional bodies that shape the policy and operational framework for oil and gas activities in the frontier regions. Many issues will need attention in 1991. And addressing those issues, the Frontier Division will continue to promote a regulatory and economic environment that encourages petroleum investment in the frontier regions. ■

PA Operations

Since the industry's earliest days in western Canada, Canadian Petroleum Association members have been in the forefront of oil and gas exploration in Canada. Association roots go back to 1927 when a group of small companies formed the Alberta Oil Operators' Association.

As the industry grew and its activities broadened, so did those of the association. It grew from a local to a regional body and, in 1952, became national under its current name.

The active membership of the CPA includes Canadian exploration, production and pipeline companies. These companies range in size from large to medium to small, and from Canadian to international. Among them, they produce 80 per cent of Canada's liquid hydrocarbons and 70 per cent of the nation's gas. They also account for two

thirds of upstream exploration and capital expenditures together with virtually all of the investments in pipelines.

A Board of Governors, made up of high-ranking officers of member companies, directs CPA affairs and develops its policies. Divisions address policies unique to British Columbia, Saskatchewan/Manitoba, the frontiers and pipelines, each of which has its own board of directors.

Some fifty standing committees, sub-committees and task forces form the backbone of the association. These committees deliberate on literally hundreds of issues in any given year. Through this organizational structure, member companies address matters that affect the entire industry. Committee members have a wide range of professional skills and experience. They include accountants, economists, drillers, engineers, geologists, environmentalists, geophysicists, landmen, lawyers and many other disciplines.

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Nova Scotia Office
802, 1809 Barrington Street
Halifax, Nova Scotia
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PERSONNEL

Ian Smyth
President

Doug Bruchet
Vice President

Hans Maciej
Vice President

Dan Macnamara
Vice President

Rhonda Boorman
Systems Support Analyst

Leo Bouckhout
*Director - Planning, Finance
and Administration*

Leonard Brooks†
Public Affairs Officer

Cal Buchanan
Manager - Natural Gas

Ron Chaplin†
Government Affairs Officer

Through the Board of Governors, the various committees and other authoritative spokesmen communicate CPA policy recommendations to governments, regulators, other trade associations and the public. The association thus provides a focal point for its member companies to develop consensus on industry issues. It also serves as a conduit, providing an industry perspective on petroleum-related issues to governments and the public.

The association also helps meet the demand for information about the Canadian petroleum industry. That demand comes from private citizens, media, companies, government agencies and others from around the world. An information backbone is the *Statistical Handbook*, now in its 36th

edition. It is the major source for petroleum statistics of any kind in Canada. It is also the basis for the CPA's online electronic database, CPASTATS. In 1990, the association published the first issue of *CPA Petro graphs*, a booklet which provides a graphic analysis of key oil and gas industry statistics.

Every year the CPA Reserves Committee releases its assessment of Canadian oil and gas reserves. This report offers estimates of crude oil, natural gas, natural gas liquids and sulphur reserves by province and region.

To supplement its information analysis and policy activities, the association has developed regional and national economic models. These econometric models assess the impact of economic and fiscal changes together with activity patterns.

Robert Dallas
Manager - PROSCARAC

Peter Devenis
Frontier Oilspill Manager

Margaret Fong
Fiscal Analyst

Peter Fournier
Manager - Regulatory Affairs

John Ludgate♦
Manager - B.C. Division

Margaret McLachlan
Manager - Public Affairs

Court Mackid
Staff Economist

Peter McKenzie-Brown
Senior Advisor - Public Affairs

Manci Proulx†
Executive Assistant

Mike Ratuski
Director - Economics

Stephen Rodrigues
Statistician

Janet Rypien§
Provincial Administrator

Ian Scott
Senior Coordinator - Pipeline Division

Gordon Steeves
Manager - Industry Operations

Jim Swiss
Senior Coordinator - Safety, Health and Environment

Laurie Taylor*
Manager - Eastcoast Region

Bill Turner†
Director - Ottawa

Barry Virtue
Director - Divisional Services

Gary Webster
Senior Coordinator - Safety, Health and Environment

Bill Whelan‡
Manager - Saskatchewan Division

Laura White
Office Manager

Christine Wignall
Public Affairs Representative

* Halifax

† Ottawa

‡ Regina

§ St. Johns

♦ Vancouver

Through the association, the industry achieves significant cost efficiency and cost savings. For example, the Natural Gas Policy Committee is a regular intervenor at regulatory hearings, especially toll hearings. The complexity of these issues and the need for continuity make it difficult for most companies to act individually on these issues. CPA involvement thus meets an important need.

The association communicates its views and policies to the public and governments through a multitude of means including publications, news releases, news conferences and comment together with technical data for the media. Hundreds of television, radio and print interviews reflect CPA views each year. The association also sponsors several industry conferences and provides speakers to address conferences in Canada, the United States and other countries.

The CPA Review continues to be the association's principal publication. The Frontier Division publishes the **Eastern Offshore News** to cover industry activities in the Atlantic, and the **Arctic Petroleum Review** to deal with issues and developments affecting the far north. Restricted to member companies, the **CPA Monitor** outlines current industry issues, noting in particular the association's involvement and position. The association introduced two new publications in 1990. The **OSCAR Report** deals with oilspill prevention and recovery in western Canada; **EDImatters** discusses electronic data interchange within Canada's petroleum industry.

In summary, through its committees, staff and six offices in Canada, the CPA is an important industry voice in the social fabric of Canada. This effective communication contributes to a sound policy environment for the industry. ■

1991/1992 Board of Governors

W.B. (Wes) Baker*
Home Oil Company Limited

D.D. (Doug) Baldwin
Esso Resources Canada Limited

J.R. (Jim) Baroffio
Chevron Canada Resources

R.P. (Ron) Billings
Mobil Oil Canada

B.J. (Bernie) Bradley*
AEC Pipelines

B.D. (Barry) Cochrane
Norcen Energy Resources Limited

J.R. (Joe) Dundas
Westcoast Petroleum Ltd.

L.B. (Lorne) Gordon
Pembina Corporation

W.J. (Warren) Hairford
Conoco Canada Limited

G.L. (Gordon) Hood*
Phillips Petroleum

A. (Andy) Janisch
Quintana Exploration Canada Ltd.

C.K. (Kent) Jespersen
Foothills Pipe Lines Ltd.

I.J. (Irv) Koop
BP Canada Inc.

R.W. (Bob) Laidlaw
Gibson Petroleum Company Limited

J.K.S. (John) Loh*
Gulf Canada Resources Limited

G.J. (Gerry) Maier
TransCanada Pipelines Limited

J.A. (Angus) McKee
Canadian Occidental Petroleum Ltd.

D. (Don) McMorland
Alberta Natural Gas Company Ltd.

R.C. (Bob) McReynolds
Amerada Hess Canada Ltd.

E.P. (Eric) Newell
Syncrude Canada Ltd.

D.B. (David) O'Brien
PanCanadian Petroleum Limited

L.E. (Len) Pasychny
Murphy Oil Canada Ltd.

J.M. (Jack) Pierce
Ranger Oil Limited

D.E. (Dave) Powell
Home Oil Company Ltd.

A.R. (Art) Price
Husky Oil Ltd.

T.H. (Ted) Renner
Saskatchewan Oil and Gas Corporation

J.W. (Jack) Schanck
Unocal Canada Limited

C.E. (Chuck) Shultz
Gulf Canada Resources Limited

B.W. (Bruce) Simpson
NOVA Corporation of Alberta

T. Don Stacy
Amoco Canada Petroleum Company Ltd.

J.M. (Jim) Stanford
Petro-Canada

B.D. (Barry) Stewart
Suncor Inc.

R.B. (Dick) Stokes
Trans Mountain Pipe Line Company Ltd.

D.G. (Doug) Stoneman
Shell Canada Limited

*Division Chairman

Organization Chart

Executive Committee Finance Committee Planning Committee

Organized under divisions and general committees, CPA standing committees are responsible to the membership through the Board of Governors, which has executive, finance and planning committees. Each division has its own board of directors.

Legend:

- Membership and Board of Governors
- Executive Committees
- Divisions
- General Committees
- Standing Committees

Accounting Committee
Customs and Sales Tax Committee
Economics Committee
Electronic Data Interchange
Income Tax Committee
Realty and Mineral Tax Committee
Reserves Committee
Statistics Committee

Communications Systems Committee
Drilling Committee
Geophysical Committee
Insurance Committee
Legal Advisory Committee
Mineral Rights Committee
NEB Cost Recovery Committee
Operations and Engineering
Committee
Surface Rights and Land Use
Committee

Crude Oil Committee
Enhanced Recovery Committee
Oil Sands and Heavy Oil Committee
Survey and Mapping Committee

Natural Gas Policy Committee
Foothills Committee
Gas Deregulation Committee
NOVA Committee
Sulphur Committee
TCPL Facilities Committee
TCPL Tolls Committee
U.S. Transportation Committee
Westcoast Committee

General Committee on Public Affairs

General Committee on Safety, Health and Environment

Alberta Petroleum Industry/
Government Environmental
Committee
Environmental Standing Committee
Human Resources Committee
Occupational and Environmental
Health Committee
PROSCARAC
Safety Committee

Arctic Management Committee
East Coast Management Committee
Environmental Committee
Fisheries Advisory Interchange
Production Committee
Safety Committee

Alberta Subcommittee
Lands and Rights-of-Way Committee
Pipeline Environmental Committee
Rate Regulation and
Accounting Committee
Technical Committee

Oil Spill Contingency Plan
Public Affairs
Safety Committee

Membership

PRODUCERS

Amerada Hess Canada Ltd.
 Amoco Canada Petroleum Company Ltd.
 Anadarko Petroleum of Canada Ltd.
 BHP Petroleum (Canada) Inc.
 BP Canada Inc.
 Canadian Occidental Petroleum Ltd.
 Chevron Canada Resources
 Conoco Canada Limited
 Esso Resources Canada Limited
 Forest Oil Corporation
 Gibson Petroleum Company Ltd.
 Gulf Canada Resources Limited
 Home Oil Company Limited
 Husky Oil Operations Ltd.
 LASMO Nova Scotia Limited
 Mobil Oil Canada
 Murphy Oil Company Ltd.
 Norcen Energy Resources Limited
 Pacific Coast Energy Corporation
 PanCanadian Petroleum Limited
 Pembina Corporation
 Petro-Canada
 Phillips Petroleum Resources Ltd.
 Placid Oil Company
 Quintana Exploration Canada Limited
 Ranger Oil Limited
 Saskatchewan Oil and Gas Corporation
 Shell Canada Limited
 Suncor Inc.
 Syncrude Canada Ltd.
 Total Petroleum Canada Ltd.
 Unocal Canada Limited
 Westcoast Petroleum Ltd.

PIPELINES

AEC Pipelines
 Alberta Natural Gas Company Ltd.
 Canadian Western Natural Gas Company Limited
 Esso Petroleum Canada
 Foothills Pipe Lines (Yukon) Ltd.
 Interprovincial Pipe Line Company
 Northwestern Utilities Limited
 NOVA Corporation of Alberta
 Peace Pipe Line Ltd.
 Polargas
 Producers Pipelines Inc.
 Rainbow Pipe Line Company Ltd.
 South Saskatchewan Pipe Line Company
 Sun-Canadian Pipe Line Company Limited
 TransCanada Pipelines Limited
 Trans Mountain Pipe Line Company Ltd.
 Trans-Northern Pipelines Inc.
 Westcoast Energy Inc.

MARKETERS

Pan-Alberta Gas Ltd.
 ProGas Limited
 Western Gas Marketing Limited

ASSOCIATE MEMBERS

All-Can Engineering & Surveys (1976) Ltd.
 Arthur Anderson & Company
 Ballem, McDill & MacInnes
 Bank of Montreal
 Bank of Nova Scotia
 Bell, Felesky, Flynn
 Canadian Imperial Bank of Commerce
 Canadian Liquid Air Ltd.
 Canadian Waste Management
 Challenger Surveys & Services Ltd.
 Chem-Security (Alberta) Ltd.

The City of Calgary
 Complete Land Services Ltd.
 Coopers & Lybrand
 Deloitte, Touche
 Eastman Christensen Canada Limited
 Ernst & Young
 GE Canada Inc.
 HGS Incorporated
 Mark, Lawson, Hughes, Inc.
 Marsh & McLennan Ltd.
 McCarthy & McCarthy
 McDaniel & Associates Consultants Ltd.
 The McElhanney Group Ltd.
 Milner Fenerty
 Monroe Engineering
 Motorola Limited
 Nickle Map Service Ltd.
 Pallister Resource Management Ltd.
 Peat Marwick
 Petro-Info Ltd.
 Price Waterhouse
 Prudential Steel Ltd.
 Pulsesearch Consolidated Technology Ltd.
 Reed Stenhouse Limited
 The Royal Bank of Canada
 ScotiaMcLeod Inc.
 Stephen Johnson
 Stewart, Weir & Co.
 Telecom Canada
 Telesat Canada
 Thorsteinsson & Company
 The Toronto-Dominion Bank
 TransAlta Utilities Corporation
 Unitel Communications Inc.
 The University of Calgary - Surveys & Mapping
 Unryn & Associates Ltd.
 Usher Canada Limited
 Westpoint Safety Services Inc.
 Ziff Energy Group

PA Awards

HONOURARY LIFE MEMBERSHIPS

A.R. (Arne) Neilsen,
retired chairman
and CEO, Mobil Oil
Canada

C.W. (Clem) Dumett, Jr.,
retired president, Unocal
Canada Limited.

SPECIAL MERIT AWARD

P.M. (Peter) Nettleton
Esso Resources Canada Limited

MERIT AWARDS

W. (Wes) Abel
Mobil Oil Canada

F.C. (Frank) Basham
BP Canada Inc.

E.B. (Ed) Bennett
Esso Resources Canada Limited

Z.L. (Zane) Berezuk
Esso Resources Canada Limited

A.G. (Al) Horne
Pembina Corporation

M.G. (Murray) Jones
Shell Canada Limited

G.R. (Gord) Lambert
Esso Resources Canada Limited

A.S. (Al) Lymer
Amoco Canada Petroleum
Company Ltd.

J.D. (John) MacPherson
Petro-Canada

I.M. (Ian) McNair
Husky Oil

D.I. (Don) Mulrain
Husky Oil

L.M. (Lane) Nagata
Trans-Northern Pipelines Inc.

H.A. (Harvey) Olson
Esso Resources Canada Limited

L.A. (Len) Page
Esso Resources Canada Limited

R.A. (Dick) Pashelka
Chevron Canada Resources

A.R. (Andy) Pool
PanCanadian Petroleum Limited

D.F. (David) Porter
BP Canada Inc.

D.C. (Doug) Schroder
PanCanadian Petroleum Limited

M.D. (Marv) Simpson
Chevron Canada Resources

P. (Peter) Strychowskyj
Peace Pipe Line Ltd.

D.R.C. (Dave) Sutton
Shell Canada Limited

C.B. (Brian) Woods
Mobil Oil Canada

H.W. (Henry) Wilting
Husky Oil

TEAM MERIT AWARD*

I.P. (Ihor) Wasylkiw
Shell Canada Limited
(Chairman)

G.M. (George) Bates
Mobil Oil Canada

G.R. (Greg) Carss
Esso Resources Canada Limited

L.J. (Larry) Fisher
Esso Resources Canada Limited

D.A. (Dan) MacLean
Chevron Canada Resources

T. (Tom) Negenman
Home Oil Company Limited

S.F. (Scott) Stonehouse
Amoco Canada Petroleum
Company Ltd.

* The first group award in the association's history, this merit award recognizes the efforts of a CPA task force which negotiated policy changes on the Section 4.2 Enhanced Recovery Royalty Relief Program with the Alberta government.

PIPELINE SAFETY AWARDS

Best performance, personal
injuries

AEC Pipelines

Mobil Oil Canada Ltd.

Sun-Canadian Pipe Line Co.

Best performance, vehicle
accidents

Esso Resources Canada (former-
ly Texaco Canada Resources)

Esso Petroleum Canada

Home Oil Company Limited

Best performance, operational
incidents
Suncor Inc.

Trans Mountain Pipe Line
Company Ltd.

Westcoast Petroleum Ltd.

NATIONAL JOURNALISM AWARDS

Print Competition

Best Entry, Daily Newspapers
Shawn McCarthy,
Toronto Star

Best Entry, Business, Financial
or Trade Publication
Tamsin Carlisle,
Financial Post

Best Entry, Community
Newspaper
Belle Hatfield,
The Vanguard, Yarmouth N.S.

Best Entry, General Interest
Publication
Jim Stanford,
Canadian Dimension

Best Entry, Column, Editorial
or Opinion
John Shiry, Financial Post

Best Entry,
Corporate Publication
Paul Miller, The Imperial Oil
Review

Broadcast Competition

Best Radio Documentary
(key market)
Susan Cardinal, CBC Radio
Sunday Morning

Best Radio Documentary
(smaller market)
Gerry Phelan VOXM Radio, St.
John's

Environmental Competition

Best Television Documentary
Marie Thompson
and Jim Hassinger,
CBC TV/Country Canada

Best Entry, Corporate
Publication
Wendy Clewes and Betty Dargie,
Shell Canada Sphere

Best Entry, General Interest
Publication,
Gary Rennie, Windsor Star